



Creative Music and its Influence on Children's Education

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Abstract

In today's world, creative thinking is needed more than ever. The wider benefits of active engagement with music throughout life have been well documented. There is evidence that playing a musical instrument and integrating music in the curriculum can have a range of positive effects on children's self-esteem, their social behavior and cognitive skills, such as creativity, spatial-temporal ability, reading, language and IQ score. Music should become a vital part of children's everyday lives and schools have a major role to play in helping children develop a positive musical identity by encouraging active participation in musical activities. When children are actively involved in creative work in music, they are behaviorally and cognitively engaged with the creative task. However, there is a problem with lack of engagement in formal music education and we need to do more to understand why many students are disengaged with music at school. More needs to be done to make music an integral part of students' lives. There is a need to study and test children's interest in music and its influences on the outcomes of children's academic performance. Music listening may be useful to promote creative thinking and the intent of this paper is to explore the influences of music and its lasting influences in various educational and organizational settings.

Creativity, cognitive development, literacy, music, behavior.

Musical Training and its impact on developing Cognitive Behavior

According to Chau and Riforgiate (2010), musical training has a great impact on a variety of aspects in early childhood. Several skills need to be learnt and honed, when training musically; For example, physical dexterity, matching vocal sounds and the ability to read music. In addition, a musician needs to distinguish between several notes and the intervals between notes. Sight-reading requires planning in a very short amount of time for the musician to be successful (Drake & Palmer, 2000). Sight-reading requires musicians to look at least two spaces ahead to plan for the upcoming notes. This can help the musician to be more aware of the music.

Only when a musician masters the balance between reading the notes and sight-reading, can they perform pleasing music in front of an audience. Chau and Riforgiate (2010) also say that the cognitive process of reading music manufactures structure and rhythm, both very necessary to a good musician.

Transfer of Learning

Every individual has a particular 'learning biography' which is reflected in the way the brain can process information. As individuals and particularly children engage with different musical activities over long periods of time, permanent changes can occur in the brain. These changes reflect what has been learnt and how it has been learnt. This also to an extent influences the extent to which developed skills can be transferred to other activities.

The transfer of learning from one domain to another domain depends on similarities in the process. Transfer between tasks is a function of the degree to which tasks share similar and cognitive processes. This paper tries to highlight how learning music can impact intellectual and creative development of children.

Perceptual and Language skills

There have been long and wide arguments on how music has been able to provide an effective and positive experience for children with learning difficulties. Research is now able to offer explanations on why this might occur. When we listen to music or speech we process an enormous amount of information rapidly with awareness. The ease with which we do this depends on prior musical and linguistic experiences. This is implicit knowledge, learned and honed through experiences and exposure to particular environments and is applied automatically when we listen to music or speech. Speech and music share some processing systems. Musical experiences which enhance speech can therefore impact on the perception of language, in turn impacting reading.

Studies with preschool children have found relationships between musical skills and the manipulation of speech sounds and phonological awareness. Gromko (2005) studied kindergarten children who received four months of musical learning for 30 minutes once a week. This training included active music making and kinesthetic movements to distinguish beat, rhythm and pitch. The children who received the instruction showed greater awareness and learned to discriminate differences between tone and rhythm.

Humans can identify the patterns and frequencies in a melody easily. This skill may be transferable when it comes to spoken intonation. A listener needs to hear the similarity of patterns to recognize pitch etc. Overall evidence suggests, that engagement with music plays a major role in developing and facilitating the encoding and identification of speech patterns. The earlier the exposure to active music and greater the length of participation, greater is the impact.

Literacy

Music not only contributes to language skill development but also to reading skills. An early study where musical introduction was designed to develop auditory and visual skills for 7-8 year old students over 6 months, found that mean reading scores improved for the intervention group, while the students who did not undertake music saw no improvement. (Douglas and Willatts, 1994).

A series of studies by Lu (1986), Montgomery (1997), Bowles (2003) and Kemmner (2003) highlight that there is no impact of music on reading scores. Overall research shows a positive impact of musical education on reading. But the factors vary. Some factors are prior and current musical knowledge, extent of developed reading skills, extent of language development, age of the children as well as the timing of the testing period. For example: testing during the summer holidays for the children may see a relatively lower reading scores.

One highly positive benefit, however, is that of developed reading skills amongst "slow-learners", i.e. children who are experiencing difficulties when reading. After musical training of a group of slow learning children by Nicholson (1972), it was found that the experimental group exhibited high reading scores. After an additional year of musical training, the scores were still superior. Therefore, it can be concluded that rhythmic performances seem to be an important factor that has a positive effect on phonological and reading abilities. Verbal memory also increases with consistent music learning. This was proved in an experiment by Chan et al.(1998) who showed that learning to play an instrument enhanced ability to remember words. Those with musical training had significantly better verbal and retention abilities, further, the longer the duration the better the verbal memory.

Apart from reading, writing also has been found to have improved with extensive exposure to learning music. A study of economically disadvantaged group of children focusing on concepts of print and pre-writing skills showed distinct advancement and growth. Although there hasn't been an equivalent result when compared to reading, the pre-writing skills such as print recognition and hand movement etc. have been known to have directly impacted and improved with continuous musical instruction.

Numeracy

It has always been assumed that there is a strong connection between music and mathematics (Vaughn, 2000). A deep understanding of the quasi-mathematical processes to sub-divide beats and turn rhythmic notation into sound. Research exploring the relationships between mathematics and active musical engagement has had mixed results. Gardiner et al. (1996) researching the impact of an arts program also found that participating children performed better in mathematics than those who did not, those participating the longest having the highest scores overall.

Focusing on children learning to play an instrument, Haley (2001) found that those who had studied an instrument prior to 4th grade had higher scores in mathematics than those in other groups. However, Rafferty (2003) found no effect of the Music Spatial-Temporal Math Program on the mathematics achievement of second graders.

The contradictory outcomes of the research might be explained by the types of musical activities engaged in and the length of time spent. Overall the evidence suggests that active engagement with music can improve mathematical performance, but the

nature of this relationship, the kinds of musical training needed to realize the effect, the length of time required needs further research.

Intellectual Development

In terms of IQ development, some significant researches were done by Hurwitz et al. (1975), Rauscher et al. (1997) and Bilhartz et al. (2000) which all proved that there is a significant dependency between music and cognitive development.

The first set of research included a group of first-grade children. Music lessons were given five days a week for seven months, a control group did not have this. At the end of the study, the experimental group scored higher than the control group. Schellenberg (2004) conducted an experiment with four different experimental groups. the first two had been receiving music lessons, the control groups received instruction in non-musical activity such as arts and drama, and the final group had no lessons. All four groups showed distinct increase in IQ scores over time as expected, however the music groups had reliably larger increases with an effect size up to .35. This included IQ score increases almost up to a full scale ranging between 4.3-7 points.

Creativity

The creative influence on music is one that is sparsely explored. Researchers have paid less attention this this impact than any other branch of development. Simpson (1969) studied high school students, having distinctive groups of music and non-music students, and found that music students showed higher results on several elements of the Guildford's tests of creativity.

Kalmar (1982) studied the effects of musical group activity and singing on pre-school kids. Those that participated had exhibited an increase in creativity, and in perceptual motor skills in kindergarten activities such as puppet play, painting etc.

One conclusion that can be made is that the development of creative skills depends on the type of musical engagement. Supported by studies taken on by Koutsoupidou and Hargreaves (2009), to enhance creativity, music lessons may need to be based on creative activities.

Social and Personal Development

Another lesser known discipline when compared to intellectual advancement is the social benefits of musical learning. Broh (2002) conducted studies and showed that students who participated in musical activities talked more with parents, and their parents were more likely to talk with their friend's parents thus concluding that these social benefits were likely to lead to higher self-esteem in children and thereby leading to increased motivation.

Being involved in extra-curricular activities such as rehearsal and performances for a school show has been shown to facilitate development of friendship with like-minded individuals and contribute to social life (Pitts, 2007)

In adolescence, music makes a major contribution to the development of self-identity. Teenagers listen to a great deal of music. It often is seen as a source of support, when teenagers are feeling lonely or troubled and acts as a mood regulator. In addition to developing social and personal skills, music also has the capacity to increase emotional sensitivity.

Emotional Development

Despite the links between musical training and literacy, numeracy or other intellectual abilities have been much more and deeply researched, there are a considerable number of studies or review of research that demonstrated also the positive impact of

music on children's socio-emotional development, including self-esteem, confidence, motivation, sense of achievement, emotional intelligence, responsibility and other social skill.

Music-evoked emotions may be critical to correlate with brain structure, sociability and learning capabilities. Learning and playing music involves almost every cognitive function and positive emotions. The rewarding emotional state induced by playing and performing music as well as the gratification of accomplishment induced by musical experience have very positive social effects and are also considered transferable. Music seems to elicit emotions and change moods through its stimulation of the autonomic nervous system. Bodily responses related to emotions in music include changes of dopamine associated with reward in listening or processing music. In addition, music generates a wide range of physiological effects on the human body including changes in heart rate, respiration, blood pressure, skin conductivity, skin temperature, muscle attention, and biochemical responses (Hallam, 2015)

Physical Development, health and wellbeing

Several studies have shown the positive impact of music accompanying physical activities as a rhythmic accompaniment. Research by Anshel and Marisi (1978), Painter (1966) and Beisman (1967) all show similar trends in the improvement of motor skills with musical engagement.

Some benefits of combining music and physical activity include: Physical relaxation, release of tension, emotional release, reduction of stress, sense of happiness, joy, elation and a greater sense of well-being. All these directly or indirectly impact a holistic view of wellbeing.

Conclusion

Based on the results and studies mentioned in this paper, it is clear that musical engagement provides several benefits throughout the lifespan of a person. In early childhood there is significant development of linguistic, literacy and perception skills which also enhances rhythmic co-ordination. It also improves spatial reasoning. Social development is also attributed to music, group music in particular contributes to increasing social skills and improve motivational aspects. This not only contributes to health and well-being of a person but also to a community cohesively when considered as a whole.

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